

PCT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No. PCT/US2005/006037	International filing date (day/month/year) 22.02.2005	Priority date (day/month/year) 23.02.2004
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International Patent Classification (IPC) or both national classification and IPC
F01M13/04, B01D46/24, B01D39/16

Applicant
DONALDSON COMPANY, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application



2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

<p>Name and mailing address of the ISA:</p>  <p>European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016</p>	<p>Authorized Officer</p> <p>Doolan, G</p> <p>Telephone No. +31 70 340-3736</p> 
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/006037

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/006037

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	1-6
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following document:

D1: US2003/0051455 A1

D2: US6174603 B1

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (page 2, paragraph 43 - page 4, paragraph 67; page 8, paragraphs 104-106):

a crankcase ventilation filter including a first media stage (224) comprising polyester fibrous media having an average fibre diameter of about 12.5 microns.

The subject-matter of claim 1 differs from this known D1 in that the first media stage of claim 1 comprises continuous, extruded fibres which are bonded at spaced locations, and have a calculate pore size in the X-Y direction of 10-60 microns.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as the provision of an alternative crankcase ventilation filter.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

There is no indication in D1 or in the remaining prior art that would prompt the skilled person to replace the polyester fibrous media of D1 with the continuous, extruded fibres bonded at spaced locations, and having the specified pore size of claim 1. Cigarette filters comprising continuous, extruded fibres bonded at spaced locations are known from D2 (column 6, line 7 - column 9, line 30). However, there is no indication that the fibres of D2 would be suitable for use in crankcase ventilation filters. The dimensions of cigarette filters are entirely different from those of crankcase ventilation filters. The operating

environments of the two types of filter are also entirely different.

The same argument applies to the subject-matter of claim 6. Therefore, the subject-matter of claim 6 also meets the requirements of Articles 33(2) and 33(3)PCT.

Claims 2-5 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

VIII

The present application does not meet the requirements of Article 5 PCT because the description does not disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art.

The core of the invention is the use of continuous, extruded fibres which are bonded at spaced locations, and have a calculate pore size in the X-Y direction of 10-60 microns in a media stage of a crankcase ventilation filter. There is no example in the description of how these continuous, extruded fibres are made or of how they are bonded to make the media stage. There is no information on how to achieve the specified pore size in the X-Y direction. It is stated in the description (page 44, lines 11-18) that the fibres can be made by similar techniques to those disclosed in three referenced documents. It is not clear from the description how the suitable techniques differ from those disclosed in the three referenced documents.

It is also stated in the description (page 44, lines 29-31) that materials capable of withstanding the environment of a crankcase ventilation filter are required. However, no example of a suitable material is given. Therefore, the skilled person is faced with the task of making the crankcase ventilation filter of the invention using undisclosed materials and an undisclosed method.